



# EUS-guided hepaticojejunostomy with transjejunal per-oral cholangioscopy and electrohydraulic lithotripsy in a patient with complicated choledocholithiasis after Roux-en-Y gastric bypass

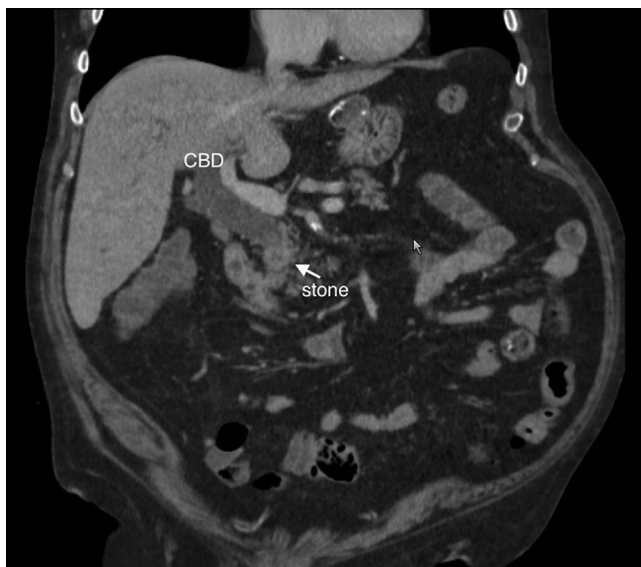
Johannes Maubach, MD, Maja Gruber, MD, Philipp Nett, MD, Andrew J. Macpherson, MD, PhD, Mathias Worni, MD, MHS

Obesity and rapid weight loss after bariatric surgery are established risk factors for gallstone disease. Especially after Roux-en-Y gastric bypass (RYGB), conventional ERCP is rarely successful in patients with symptomatic choledocholithiasis.

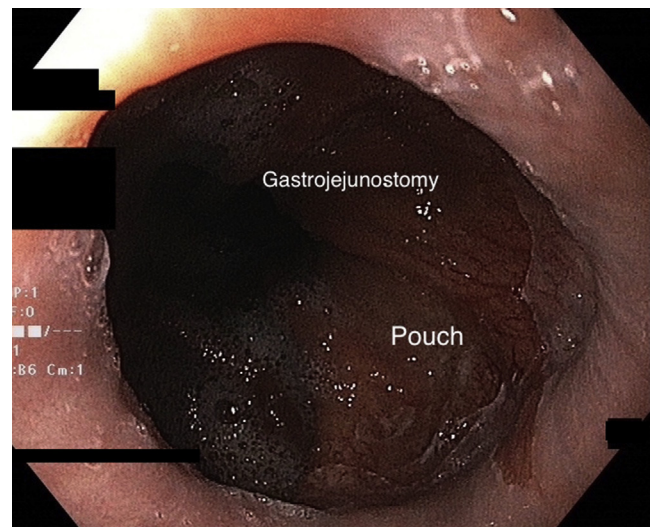
The success rate can be increased up to 70% by enteroscopy-assisted ERCP; however, this procedure is cumbersome and time-consuming. Percutaneous transhepatic cholangiography with drainage or laparoscopic-assisted ERCP are current alternatives if the endoscopic approach fails. In addition, recent reports have stated that the remnant stomach can be accessed either percutaneously or by EUS-guided stent placement, offering subsequent papillary access.

Here we report the case of a 66-year-old man who was admitted with septic cholangitis due to choledocholithiasis (Fig. 1). He had undergone RYGB with cholecystectomy

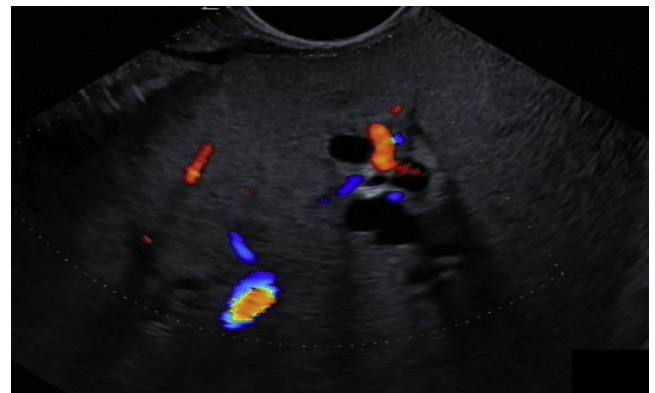
8 years earlier because of morbid obesity. Upper endoscopy showed a small gastric pouch with an open gastrojejunostomy (Fig. 2).



**Figure 1.** CT scan showing intrahepatic and extrahepatic bile ducts with an obstructing stone in the distal common bile duct (CBD).



**Figure 2.** Upper endoscopic view revealing a small gastric pouch after Roux-en-Y gastric bypass.

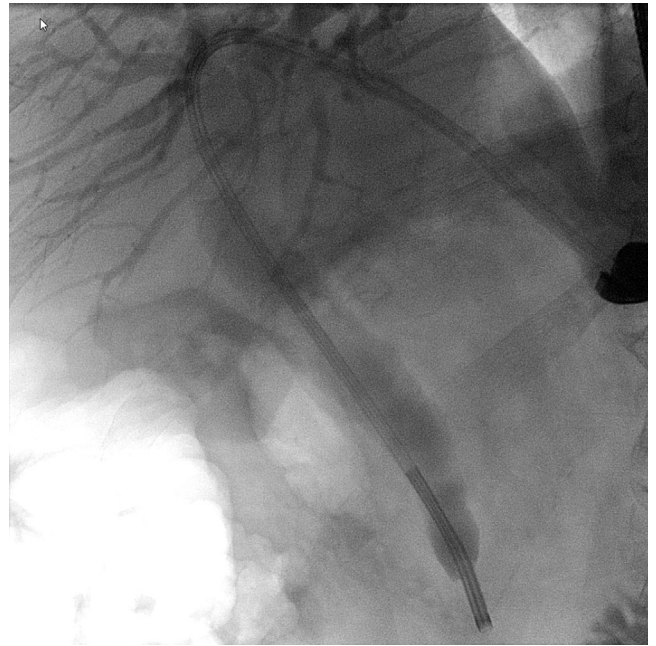


**Figure 3.** EUS view confirming dilated intrahepatic bile ducts.

Written transcript of the video audio is available online at [www.VideoGIE.org](http://www.VideoGIE.org).



**Figure 4.** Final endoluminal position of the fully covered metal stent creating a hepaticojejunostomy.



**Figure 6.** Cholangioscopic view without any evidence of residual stone fragments.



**Figure 5.** Cholangiographic view 6 weeks after transjejunal cholangioscopy with electrohydraulic lithotripsy, confirming stone-free biliary system.

EUS revealed dilated intrahepatic bile ducts (Fig. 3), and the gastric remnant could not be visualized. To relieve cholestasis, EUS-guided biliary drainage connecting hepatic segment III with the Roux-en-Y limb was performed by

the insertion of a self-expanding covered metal stent (SEMS) (Fig. 4).

Three weeks later, after maturation of the hepaticojejunostomy, a transjejunal cholangioscopy was performed by advancing a spyscope through the SEMS. A 2-cm biliary stone was identified in the mid-common bile duct and was fragmented by electrohydraulic lithotripsy (EHL). A second stone was found in the prepapillary region, distal to the first stone. EHL was successfully repeated in the same fashion.

Finally, the papilla was cannulated, and a guidewire was passed into the duodenum. The papilla was dilated to 10 mm, and a 10F 15-cm double-pigtail stent was inserted, extracting the SEMS during the same process (Video 1, available online at [www.VideoGIE.org](http://www.VideoGIE.org)). Six weeks later, during follow-up endoscopy, injection of contrast material into the biliary system showed a completely cleared common bile duct (Fig. 5). Even repeated cholangioscopy could not reveal any residual stone fragments (Fig. 6). The patient remains well; no further endoscopy is planned.

Transenteric access to the biliary system through the left liver lobe is a novel alternative route in patients with biliary disease, especially in patients with altered anatomy where conventional ERCP is not easily feasible. Given the growing numbers of RYGB patients, this procedure offers an appealing method of treatment compared with percutaneous transhepatic cholangiography with drainage,

enteroscopy-assisted ERCP, or a surgical approach. Transenteric per-oral cholangioscopy in combination with EHL appears to be safe and effective, but long-term data are definitely warranted.

## DISCLOSURE

*All authors disclosed no financial relationships relevant to this publication.*

*Abbreviations: EHL, electrohydraulic lithotripsy; RYGB, Roux-en-Y gastric bypass; SEMS, self-expanding covered metal stent.*

Department of Visceral and Transplantation Surgery, Inselspital, Bern University Hospital, University of Bern, Bern, Switzerland.

Copyright © 2018 American Society for Gastrointestinal Endoscopy. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

<https://doi.org/10.1016/j.vgie.2018.07.017>

### Submit to *VideoGIE*

*VideoGIE* is now indexed in PubMed Central.

*VideoGIE* is an Open Access, online-only journal indexed in PubMed Central. Submit video cases of endoscopic procedures used in the study, diagnosis, and treatment of digestive diseases.

*VideoGIE* publishes the following article types:

- **Case Reports:** Reports of the diagnosis and management of digestive diseases using a single case.
- **Case Series:** Reports of the diagnosis and management of digestive diseases using 3 or more cases.
- **Tools and Techniques:** Educational videos demonstrating the use of a particular endoscopic tool or technique. The goal of this section is to help trainees, endoscopy nurses, and technicians learn how best to use the tools of endoscopy for high-quality care.

All manuscripts must be submitted online at <http://www.editorialmanager.com/vgie>